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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,042

03/17/2005

Junko Nishiyama

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EXAMINER

MURALIDAR, RICHARD V

ART UNIT

PAPER NUMBER

2858

MAIL DATE

DELIVERY MODE

10/05/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,042	Applicant(s) NISHIYAMA ET AL.	
	Examiner RICHARD V. MURALIDAR	Art Unit 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/19/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/17/2009 has been entered.

2. Claim 2 has been cancelled and incorporated into claim 1. Claims 17-19 are newly added. Claims 1 and 3-19 are pending for prosecution.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 1 and 3-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Podrazhansky et al. [U.S. 6,366,056].**

7. With respect to claims 1, 7, and 17 Podrazhansky discloses a lithium ion secondary battery system **(the system claims encompass the method claims)** comprising: a lithium ion secondary battery **[Fig. 2, battery 111; col. 3 lines 1-6]**; and a control unit **[Fig. 2, controller 113]** which carries out an intermittent power feeding in which a power feeding **[Fig. 1, 1A, 1B...1N; 7A, 7B, ...13A, 13B,...13N]** and a pause **[Fig. 1, 2A, 2B,...2M; 3, 5, 6, 8, 9, 11, etc.]** are repeatedly executed **[col. 3 lines 7-24; col. 6 lines 45-54]**, when a lithium ion secondary battery is discharged **[Fig. 1, 4A, 4B, 10, 12A, 12B, etc.]** with not less than a predetermined discharge rate **[col. 7 lines 1-10; col. 7 lines 50-55; col. 8 lines 31-34]**, and wherein said control unit executes said pause for a period not less than the period required for the voltage of the lithium ion secondary battery to restore up to not less than 70% of an open circuit voltage [inherently disclosed at col. 7 lines 32-46; rest periods are not fixed, they may be varied as desired, as well as on charging conditions. A battery will recover its full OCV in the 2-

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6 milliseconds cited, “depending on the ability of the anode to absorb the lithium”] after the lithium ion secondary battery is discharged until the voltage thereof reaches a discharge end voltage **[Fig. 1, pauses are executed after discharges at 2A, 2B, ...2N etc. the discharge end voltage is the voltage pulses returning to zero after 1A, 1B, ...1N pulses are completed]**, when the lithium ion secondary battery is discharged.

Podrazhansky discloses either directly or implicitly all ranges of OCV by the battery during the rest periods. However, where such interpretation is not agreed with, one of ordinary skill in the art would certainly use the disclosure at col. 7 lines 32-35 to perform routine experimentation on the rest periods in order to come up with an optimized value of OCV, such as recited, for the benefit of enhancing the periodic charging pulses themselves, as disclosed in col. 6 lines 58-67 and col. 7 lines 1-30, since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Swain et al.*, 33 CCPA (Patents) 1250, 156 F.2d 239, 70 USPQ 412; *Minnesota Mining and Mfg. Co. v. Coe*, 69 App. D.C. 217, 99 F.2d 986, 38 USPQ 213; *Allen et al. v. Coe*, 77 App. D.C. 324, 135 F.2d 11, 57 USPQ 136.

8. With respect to dependent claims 3-6, 8-16 and 18-19, Podrazhansky discloses all limitations either expressly, or implicitly. Refer to the disclosure at Fig. 1, with accompanying descriptions at **[col. 6 lines 57-67, col. 7 lines 1-15, 25-30, 32-35, 47-61; col. 8 lines 1-12, 17-20, 30-34, 40-44; col. 9 lines 11-30, 40-56; col. 10 lines 9-12, 57-62; col. 11 lines 1-5; col. 12 lines 6-33 and 47-48]**. The claim 19 limitation is

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interpreted to mean the discharge rate is equal to the nominal capacity of the battery [Podrazhansky Fig. 1 shows the discharge voltage and current pulses as equal in magnitude to the charging voltage and current pulses].

Response to Arguments

9. Applicant's arguments filed 08/17/2009 have been fully considered but they are not persuasive.

10. Applicant argues on page 10 of remarks that Podrazhansky is only directed to charging lithium based batteries. The examiner points out Fig. 1, which shows multiple periods of controlled rest periods [**Fig. 1, 2A, 2B,...2M; 3, 5, 6, 8, 9, 11, etc.**] and discharge periods [**Fig. 1, 4A, 4B, 10, 12A, 12B, etc.**] as well.

11. The argument concerning the "70%" limitation is unpersuasive; as the pauses are variable [col. 7 lines 32-45] and one of ordinary skill would understand that 70% of the voltage would be recovered, given sufficient pause, or routine experimentation of such pauses.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD V. MURALIDAR whose telephone number is (571)272-8933. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Assouad can be reached on 571-272-2210. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Richard V Muralidar/
Examiner, Art Unit 2858

/Edward Tso/
Primary Examiner, Art Unit 2858